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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,790	04/16/2004	James David McWhite	83,317	1376
38092 7590 01/20/2010 OFFICE OF PATENT COUNSEL, CODE 004 NAVAL SURFACE WARFARE CENTER, CARDEROCK DIVISION 9500 MACARTHUR BLVD., BLDG M WEST BETHESDA, MD 20817-5700			EXAMINER FEENEY, BRETT A	
			ART UNIT 3624	PAPER NUMBER
			NOTIFICATION DATE 01/20/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

stacey.finley@navy.mil
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Office Action Summary

Application No.

10/826,790

Applicant(s)

MCWHITE, JAMES DAVID

Examiner

BRETT FEENEY

Art Unit

3624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/10/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 15 and 21-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 15 and 21-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

Status of the Claims

1. The following Supplemental **FINAL** Office action is in response to Applicant's submission received on 07/10/2009. The following action is being issued because the Examiner neglected to disclose the patent number for Rapeli, US 6,105,525, in the previous Office action, which was applied as prior art for the § 103 rejection. The Examiner has discussed the fact that the patent number for Rapeli was neglected and disclosed the patent number to Attorney for Applicant, Howard Kaiser, in a telephone interview on Thursday January 7, 2010.
2. Claims 1 and 15 were amended. Claims 2-14 and 16-20 were canceled. Claims 21 - 38 were added.
3. Claims 1, 15 and 21 – 38 are currently pending and have been examined.

Response to Amendments

4. Applicant's amendments to claim(s) are herein acknowledged. As a result, the Examiner withdraws the previous rejection under § 103 and has entered a new rejection under § 103. Further, the Examiner has entered rejections under § 101 and § 112 due to the amendments to the claims.

Response to Arguments

Art Unit: 3624

5. Applicant's arguments received on July 10, 2009 have been fully considered but they are moot in view of the new ground(s) of rejection.

Rejections under § U.S.C. 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claims 34 – 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- Claims 34 – 38 are hybrid claims that do not qualify as product by process claims. It is not clear whether the claim is directed to the method or the apparatus. Therefore, claims 34 – 38 are vague and indefinite. Appropriate correction is required.

Rejections under § U.S.C. 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1, 15 21, 22 and 27 – 38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
9. Claims 1, 21 and 22 are directed to a method. However, the recited steps of the method are held to be non-statutory subject matter because the recited steps of

the method are (1) not tied to another statutory class or (2) not transforming the underlying subject matter to a different state or thing. Applicant may consider amending the claims to such that the computer is tied to the steps that are executed in the independent claim.

10. Claims 15 and 27 – 38 are directed to a manufacture and an apparatus. However, the recited components of the apparatus appear to lack the necessary physical components (hardware) to constitute a machine or manufacture under § 101. Therefore, these claim limitations can be reasonably interpreted as computer program modules or software *per se*. The claims are directed to functional descriptive material *per se* and hence non-statutory. Applicant may consider amending the claims directed to the manufacture such that they are recite Beauregard type claims. Further, Applicant may consider amending the apparatus claims such that they are directed towards components of the apparatus that are configured to execute the recited limitations.

Rejections under § U.S.C. 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 15, 21 – 26, 28 – 30, 32 – 35, 37 and 38 are rejected under § 103(a) as being unpatentable over Lee et al. (July, 2002). Optimal Compartment Layout Design for a Naval Ship Using an Improved Genetic Algorithm. *Marine Technology* 39(3): 159-169 (herein Lee), in view of Rapeli US 6,105,525 (herein Rapeli), further in view of Advanced Surface ship Evaluation Tool (ASSET) Ship Design Synthesis Programs, 12/15/1996 (herein ASSET).

Claim 1

Lee discloses a method for estimating shipboard stowage requirements the method comprising:

- *selecting plural stowage aid types, each said stowage aid type being characterized by a stowage aid net volume and stowage aid footprint area (see Lee at 160; noting "compartments" wherein the compartments are defined by "upper and lower bounds of the required area for each compartment". Further, see Lee at 165; noting a plurality of compartment types are defined "electronic equipment room", "ship office", "officer room", etc.);*
- *estimating the total stowage aid deck area required for each said stowage aid type, said estimating of the total stowage aid deck area including calculating the estimated said total volume of items to be stored in each said stowage aid type multiplied by the stowage aid footprint area, and divided by the stowage aid net volume (see Lee at 164 and 165; noting "[t]he actual compartment layout of the aftbody on the second deck (frame no. 68-92) of the FF-21 is shown in Fig. 14 and it has the available area of a rectangular boundary shape with 20*

Art Unit: 3624

compartments, two watertight transverse bulkheads, two horizontal passages, and two vertical passages." Further, see Fig. 16 and associated text; noting the deck area is calculated via calculating the boundary area(s) of the compartments in the area.);

- *establishing three longitudinal ship sections, said longitudinal ship sections being the forward ship section, the mid ship section and the aft ship section (see Lee at 165; noting the ship is sectioned in x, y and z directions and further defined by the mid ship, "fore body" and "aft body").;*
- *selecting plural rectangular storeroom types, each said rectangular storeroom type being characterized by a storeroom area and lengthwise storeroom dimensions, each said rectangular storeroom type differing from every other said rectangular storeroom type in at least one of said storeroom area and said lengthwise-widthwise storeroom dimensions (Id. Further, see Fig 14 and associated text; noting each compartment 1 – 19 represent a specific compartment type wherein *inter alia* compartments 17 – 19 are "officer rooms" and compartment 10 is a "switchboard room". Further as noted *supra*, each compartment has specified dimensions.*
- *designating a sectional percentage for each said rectangular storeroom type with respect to each said longitudinal ship section, said sectional percentage being the percentage of total rectangular storerooms of said rectangular storeroom type that are in said longitudinal ship section (see Lee at 160; noting "adjacency values" are used to define where compartments should be located in the ship,*

necessary distances (clearances) juxtaposed the compartments. Further, the Examiner notes that while Lee discloses the step of designating a sectional percentage for compartments, the step is directed towards non-functional data and is not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP 2106.);

- *estimating a compartment utilization factor for each said rectangular storeroom type with respect to each stowage aid type, said compartment utilization factor being indicative of the capacity of the rectangular storeroom type to contain at least one said stowage aid type, said compartment utilization factor being defined in term of the net volume of said rectangular storeroom type, divided by the gross volume of said rectangular storeroom type (see Lee at 160; noting the “aspect ratio” is used to define the upper and lower bounds of the compartment. Further, the Examiner notes that while Lee discloses the step of estimating a compartment utilization factor, the compartment utilization factor is directed towards non-functional data and is not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data.);*

- *estimating the total storeroom deck area required for each said rectangular storeroom type with respect to each said longitudinal ship section, said estimating of the total storeroom deck area including summing calculations of the estimated said total stowage aid deck area required for each said stowage aid type, multiplied by the designated said sectional percentage for each said rectangular storeroom type and divided by the estimated said compartment utilization factor for each said rectangular storeroom type (see Fig. 13 and associated text; noting the total "compartment layout plan" is performed by taking the total areas from the aft body, fore-body and mid-ship; which are an aggregate of each compartment and respective layout.).*

Lee does not explicitly recite that the compartments used in the design and optimization of the ship design are for "stowage" per se, however in analogous art, Rapeli does (see column 4, lines 27-47; noting "palletized general goods, containers and/or bulk goods" and "stowage"). Further, Lee/Rapeli/ASSET disclose methods of calculating areas, volumes, etc.; not estimating, however in analogous art ASSET teaches the step of estimating (see ASSET at page 2; noting "initial estimate for length"). It would have been obvious to a person having ordinary skill in the art, at the time of the invention, to combine the method for estimating shipboard requirements taught by Lee with the step of calculating shipboard requirements for stowage taught by Rapeli, with the step of estimating areas taught by ASSET because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of

Art Unit: 3624

ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 21

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Rapeli teaches:

- *wherein each said stowage aid type has the character of at least one a pallet (Id.)*

It would have been obvious to a person having ordinary skill in the art, at the time of the invention, to combine the method for estimating shipboard requirements taught by Lee/Rapeli/ASSET with the step of estimating shipboard requirements for a pallet taught by Rapeli because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claim 22, 24 and 26

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Lee discloses:

- *wherein the method is for assisting in the design of a ship and wherein the method further comprises conveying or making available to at least one participant in the design of a ship information indicative of the estimated said total storeroom deck area required for each said rectangular storeroom type with respect to each said longitudinal ship section (Id. at Claim 1. Further, see Lee at*

160; noting the method and information associated therewith are available to "a designer".).

Claim 23

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Lee discloses:

- wherein the method is a computer-implemented method (see Lee at 159; noting "computing"; "computer-based design system"; etc.).

Claim 25

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Lee discloses:

- further comprising displaying information indicative of the estimated said total storeroom deck area required for each said rectangular storeroom type with respect to each said longitudinal ship section (*Id.* at **Claim 1**. Further noting Fig. 13 and Fig. 16 are both exemplary displays of information "indicative" of the estimated total storeroom deck area.).

Claim 28

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Lee discloses:

- *further comprising estimating the total number of said rectangular storerooms of each said rectangular storeroom type with respect to each said longitudinal ship section, said estimating of the total number of said rectangular storerooms*

including calculating the estimated said total storeroom deck area required for each said rectangular storeroom type with respect to each said longitudinal ship section, divided by said storeroom area (Id. at Claim 1. Noting, the compartments are broken down by compartment types in each section.).

Claim 29

Lee/Rapeli/ASSET teaches the limitations above. Furthermore, Lee discloses:

- *further comprising upwardly adjusting the estimated said total storeroom deck area required for each said rectangular storeroom type with respect to each said longitudinal ship section, said upward adjustment including taking into consideration respective entranceways associated with at least some said rectangular storeroom of each said rectangular storeroom type (Id. at Claim 1. Noting, the method taught by Lee accounts for “horizontal passages”; “vertical passages”; “bulkheads”; “necessary void space”; etc.).*

Claims 15, 30, 32 – 35, 37 and 38 recite limitations addressed in the claims above.

Therefore, claims 15, 30, 32 – 35, 37 and 38 are rejected for similar reasons.

13. Claims 27, 31 and 36 are rejected under § 103(a) as being unpatentable over Lee, in view of Rapeli, further in view of ASSET, further in view of Nakagawa, US 2002/0032554 (hereinafter Nakagawa).

Claim 27

Lee/Rapeli/ASSET teaches the limitations above. Lee discloses that containers may have the same or different dimensions and utilization factors within a specified area. Lee/Rapeli/ASSET does not explicitly recite, however in analogous art Nakagawa teaches:

- *wherein at least two said rectangular storeroom types are characterized by the same said storeroom area; different said lengthwise-widthwise storeroom dimensions; different said compartment utilization factors with respect to the same said stowage aid type (see FIGs 6 & 7 and associated text; noting the cell object may be applied to the same commodities to be warehoused, have different specified lengthwise dimensions, allowable empty space, restrictions, degrees of freedom, etc.).*

It would have been obvious to a person having ordinary skill in the art, at the time of the invention, to combine the method for estimating shipboard requirements taught by Lee/Rapeli/ASSET with the compartments that have different dimensions and utilization factors taught by Nakagawa because the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Claims 31 and 36 recite limitations similar to claim 27. Therefore claims 31 and 36 are rejected for similar reasons.

Conclusion

The following references provide different systems and methods for modeling and planning a plurality of vessels including ships. All of the cited references explicitly teach methods for modeling ships based on constraints, stowage requirements, etc. and are therefore considered relevant to the instant application.

- Nathaniel et al., US 3,162,168; discloses a ship design unit for increased cargo capacity.
- Franz et al., US 4,630,561; discloses an invention for ship design directed towards efficaciously distributing cargo.
- Wilts, US 5,299,520; discloses a merchant ship planning unit for designing vessels based on requirements for use.
- Dumás et al., US 5,388,541; discloses a ship design unit based on specialized cargo requirements.
- Letcher, US 5,627,949 and US 5,856,828; discloses an object oriented computer aided system and method for designing ships based on geometrical requirement types.
- Michaelson et al., US 5,970, 899; discloses a system and method for designing ships based on cargo and accessibility requirements.
- Russell et al., US 2003/0093178; discloses and system and method for materials transport and storage.
- Guigan, US 2005/0150175; discloses a system and method for planning modular accommodations.

- Macy et al., US 6,931,294; discloses a CAD program that may use legacy based solutions and models complex interactions of the components containing a plurality of constraints.
- Tan KT and Bligh TP (1998). A New Approach to an Integrated CAD Method for Surface Ship Design. Naval Engineers Journal. January. pp. 35-48.
- Wayne P. Hughes Jr. Source: Operations Research, Vol. 50, No. 1, 50th Anniversary Issue (Jan. - Feb., 2002), pp. 103 -111.
- Şebnem Helvacıoğlu and Mustafa Insel (2002). CONTAINER SHIP ACCOMMODATION LAYOUT DESIGN WITH APPLICATION OF EXPERT SYSTEMS (ALDES) İTÜ Faculty of Naval Architecture and Ocean Engineering.
- Lee KH, Lee JK and Park NS (1997). Intelligent Approach to a CAD System for The Layout Design of a Ship Engine Room. Computers ind. Engng. 34(3): 599-608.
- Lee D and Lee KH (1999). An approach to case-based system for conceptual ship design assistant. Expert System with Applications. 16: 97-104.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 3624

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Brett Feeney** whose telephone number is **571.270.5484**. The Examiner can normally be reached on M - R 7:30 - 6:30 EST. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **BRAD BAYAT** can be reached at **571.272.6704**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

Art Unit: 3624

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/BRETT FEENEY/

Examiner, Art Unit 3624

/Scott L Jarrett/
Primary Examiner, Art Unit 3624